

Exercise 3: Collecting Field Data

Description: This exercise introduces you to using Global Positioning System (GPS) and Survey123 to collect data in the field. It also introduces fundamental concepts needed for developing a schema and designing a field survey. You will submit survey responses, questions about each survey location, and sketch a schema for a Human Geography theme of your group's choosing.

Note: It is highly recommended that you take notes while you do the lab to track what you have done.

Objectives:

- Understand what hardware and software are involved in field collection
- Use GPS to navigate and collect data in the field.
- Work in both an online and offline GIS environment
- Consider the unique role of field data collection in data creation.
- Design a basic schema

Skills: Database design and forward planning; GPS and navigation; data creation; data sharing.

Data: Human Geography Field Exercise Survey; Coordinates listed in lab.

Part 1: Field Preparation

1. **Log** in to the University WiFi
2. **Open** the Survey 123 App.
3. Using your team's ArcGIS Online Account, **sign in** to ArcGIS Online through the Survey123 app.
4. **Download** the survey 'Human Geography Field Exercise'
5. **Review** the survey form and familiarize yourself with the information needed to complete the form.
 - a. The Survey123 app will still collect data and your location while **offline**. You may not see your location on a map if the Survey123 app did not **cache** that portion of the map while it was online. **DO NOT adjust the map location** if you cannot see the map.

Part 2: Field Data Collection

6. **Navigate** to the following coordinates and collect data about each location using the Survey123 app. **Fill out** the Survey123 form and **answer** the questions listed in step 7 for each location to the best of your ability.
 - a. Coordinate 1
 - b. Coordinate 2
 - c. Coordinate 3
 - d. Coordinate 4
 - e. Coordinate 5

7. Questions about each location:
 - a. What additional information about this location and others like it are only detectable in the field and might be useful to have in a database for reference or analysis?
 - b. How might the location of this resource be important during a natural or man-made disaster?
 - c. Is this the appropriate scale to collect data about this resource? What other data at a smaller or larger scale might be important to collect about this resource or topic?

Part 3: Field Data Submission

8. **Return** to the lab.
9. **Reconnect** to the WiFi
10. **Open** the Survey123 App and **Submit** your survey responses.

Part 4: Database design

11. Challenge: Develop a database schema

- a. As a group, choose a Human Geography theme which interests your team.
- b. Consider what geographic features might be included in this theme and list three.
- c. Discuss what attributes would be important to include in a database about each of these features. List 3-5 attributes, other than location, and what sort of data would be needed (text, integers, decimals, images, etc)
- d. Consider whether any of your attributes should be standardized versus free text, and list at least three standardized options for each of these attributes.
- e. **Hint:** Use a table to organize your information rows and columns in Excel or sketch out your schema on a piece of paper.